Author Index

Azad A K M 113-130
Aziz K I 131-139

Balakrishnan S R 273-281
Bartlett H 31-43
Burrows C R 221-230

Channon P H 51-63
Chapple P J 231-242
Cheesewright R 243-247
Chen Y-M 141-150
Clark C 243-247

Dalay B S 45-50
Drew J E 65-74

Edge K A 189-200,221-230
Evans P R 259-271

Frost G P 249-257

Gill K F 141-150
Gordon T J 249-257
Grinnell B G 169-182

Harris C J 13-30
Hawkley C J 77-93
Hill D E 259-271
Hopkins S H 51-63
Howell M N 249-257
Huang S-J 153-167

Johnston D N 65-74

Kwong A H M 189-200

Lawrence A J 13-30
Lian R-J 153-167
Liu G P 183-188
Lucas T N 95-102

Martin K F 283-290
Medvedev V S 45-50
Mitchell D 31-43
Moavenian M 283-290

Nowosad K 291-292

Patton R J 183-188
Pham D T 51-63
Pollmeier K 221-230

Quintas M R 103-111

Richard E 103-111
Romanova T A 45-50
Rossiter J A 169-182

Santhakumar S 273-281
Scavarda S 103-111
Schweitzer G 1-11
Shen J-C 215-218
Sidders J A 231-242
Smith I D 95-102

Thomson M 131-139
Tilley D G 231-242
Tokhi M O 113-130
Trebi-Ollennu A 201-214

Vaughan N D 259-271

Watton J 77-93
Whalley R 31-43
White B A 201-214
Wu Q H 249-257

© IMechE 1996

Subject Index

Absorbers, dynamic 153-167
Active magnetic bearings 1-11
Active suspension 249-257
Active suspension, semi- 249-257
Active vibration control 153-167
Adaptive dynamic control 141-150
Adaptive fuzzy system 201-214
Aircraft gas turbine engines, twin-spool 273-281
Algorithm, minimal controller synthesis 131-139
Algorithm, minimal observer synthesis 131-139
Approximation, least-squares 95-102
Approximation technique, Padé 95-102
Approximation unifying theory 95-102
Auto-tuning 13-30
Automaton, learning 249-257

Bath*fp* software package 231-242
Bearings, active magnetic 1-11
Biped robots 51-63
Blender-beater, pulp 31-43
British Standard BS6335: 1990 65-74

Calibration, small turbine flowmeter 243-247
Cerebral model articulation controller 13-30
Closed-loop control 113-130
Compensation control 141-150
Computer simulation 141-150
Control, active vibration 153-167
Control, adaptive dynamic 141-150
Control, closed-loop 113-130
Control, compensation 141-150
Control, dynamic 249-257
Control, hybrid intelligent 153-167
Control, multi-variable descriptive 183-188
Control, non-linear robust 103-111,201-214
Control, open-loop 113-130
Control, underwater vehicle depth 201-214
Control system synthesis 45-50
Control systems, *n*-legged robot 51-63
Controller, cerebral model articulation 13-30
Controller, fuzzy logic 273-281
Controller, proportional integral derivative 273-281
Controller synthesis algorithm, minimal 131-139
Controller tracking, generalized predictive control ..169-182
Controllers, memoryless stabilizing 215-218
Controllers, proportional integral differential 13-30

Delay, time-varying 215-218
Depth control, underwater vehicle 201-214
Descriptive control, multi-variable 183-188
Detection, failure 283-290
Detection filters, residual difference generation 283-290
Dynamic absorbers 153-167
Dynamic control 249-257
Dynamics, rolling mill 259-271

Eigenvectors, generalized 183-188
Electrohydraulic system 103-111
Electromagnetic pick-ups 243-247

Failure detection 283-290
Flexible robot manipulators 113-130
Flowmeter calibration, small turbine 243-247
Fluid power 231-242
Fluid power parallel simulation 221-230
Fluid-borne noise, pump 65-74
Fuzzy logic 141-150,153-167
Fuzzy logic controller 273-281
Fuzzy system, adaptive 201-214

Gas turbine engines, twin-spool aircraft 273-281
Generalized eigenvectors 183-188
Generalized predictive control controller tracking ...169-182
Guage tension interactions 259-271

Hybrid intelligent control 153-167
Hydraulic transmission line dynamics synthesis, oil ...77-93

Label-based neuro-tuning 13-30
Leakage flowrate, servovalve 103-111
Learning, reinforcement 249-257
Learning automaton 249-257
Least-squares approximation 95-102

Magnetic bearings, active 1-11
Manipulators, flexible robot 113-130
Manipulators, multi-degree of freedom robot 45-50
Mathematical models 231-242,259-271,283-290
Matrix quadratic equations 31-43
Matrix quadratic models 31-43
Mechanical system models 31-43
Mechatronics 1-11
Memoryless stabilizing controllers 215-218
Mill dynamics, rolling 259-271
Minimal controller synthesis algorithm 131-139
Minimal observer synthesis algorithm 131-139
Model articulation controller, cerebral 13-30
Model reduction 95-102
Modelling, thermal-hydraulic performance 231-242
Modelling, transmission line 221-230
Models, mathematical 231-242,259-271,283-290
Models, matrix quadratic 31-43
Models, mechanical systems 31-43
Multi-degree of freedom robot manipulators 45-50
Multi-input multi-output system 153-167
Multi-variable descriptive control 183-188

Neural networks 141-150,153-167
n-Legged robot control systems 51-63
Noise, pump fluid-borne 65-74
Noise, structure-borne 189-200
Non-linear robust control 103-111,201-214
Non-linear systems 141-150

© IMechE 1996

Observer stability, subreduced 291-292
Observer synthesis algorithm, minimal 131-139
Observers 215-218
Oil hydraulic transmission line dynamics synthesis ...77-93
Open-loop control 113-130

Padé approximation technique 95-102
Parallel simulation, fluid power 221-230
Partitioned simulation 221-230
Pick-ups, electromagnetic 243-247
Pipe vibration 189-200
Positive displacement pumps 65-74
Prefilters 169-182
Proportional and derivative control 113-130
Proportional integral derivative control 13-30,113-130 273-281
Pulp blender-beater 31-43
Pump fluid-borne noise 65-74
Pumps, positive displacement 65-74

Quadratic equations, matrix 31-43
Quadratic models, matrix 31-43

Reinforcement learning 249-257
Remotely operated vehicles 201-214
Residual difference generation detection filters 283-290
Riccati equation 215-218
Robot manipulators, flexible 113-130
Robot manipulators, multi-degree of freedom 45-50
Robot tactile sensors 1-11
Robot vision 1-11
Robots, biped 51-63
Robots, *n*-legged, control systems 51-63
Robust control, non-linear 103-111,201-214
Rolling mill dynamics 259-271

Semi-active suspension 249-257
Sensors, robot tactile 1-11
Servo motors 283-290
Servovalve leakage flowrate 103-111
Simulation, computer 141-150
Simulation, fluid power parallel 221-230
Small turbine flowmeter calibration 243-247
Stability, subreduced observer 291-292
Stabilizing controllers, memoryless 215-218
Structural vibration prediction 189-200
Structure-borne noise 189-200
Subreduced observer stability 291-292
Suspension, active 249-257
Suspension, semi-active 249-257
Synthesis, control system 45-50
Synthesis, oil hydraulic transmission line dynamics ...77-93

Tactile sensors, robot 1-11
Tension 259-271
Thermal-hydraulic performance modelling 231-242
Time-varying delay 215-218
Tracking, generalized predictive control controller ..169-182
Transmission line dynamics synthesis, oil hydraulic ..77-93
Transmission line modelling 221-230
Tuning, auto- 13-30
Tuning, label-based neuro- 13-30
Turbine flowmeter calibration, small 243-247
Twin-spool aircraft gas turbine engines 273-281

Underwater vehicle depth control 201-214
Unifying theory, approximation 95-102

Vibration, pipe 189-200
Vibration control, active 153-167
Vibration prediction, structural 189-200
Vision, robot 1-11

Walking machines - *see n*-Legged robot control systems

© IMechE 1996